

AMENDMENTS TO THE CLAIMS:

The listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-34 (Canceled).

35. (Withdrawn) A plunger for engaging a threaded shaft and for expelling fluid from a syringe body, said plunger comprising:

a plunger stem having a distal end and a proximal end;

a stopper positioned at the distal end of the stem, the stopper sized to fit within the syringe body; and

a flange positioned at the proximal end of the stem, the flange extending radially outwardly from the stem and having a threaded portion sized to engage the threaded shaft.

36. (Withdrawn) The plunger of claim 35 wherein the threaded portion is molded into the flange.

37. (Withdrawn) The plunger of claim 35 wherein the threaded portion comprises at least one recessed half-nut.

38. (Withdrawn) The plunger of claim 35 wherein the edges of the flange adjacent the threaded portion are formed to guide the threaded portion onto the threaded shaft.

39. (Withdrawn) The plunger of claim 35 wherein a guide slot is provided on the plunger substantially opposite the threaded portion.

40. (Withdrawn) The plunger of claim 35 wherein the plunger stem comprises an open area in the area extending from the threaded portion to the stopper to receive the threaded shaft.

41. (Withdrawn) The plunger of claim 35 wherein the plunger comprises a plurality of markings adapted to indicate the movement and position of the plunger within the syringe body.

42. (Withdrawn) The plunger of claim 41 wherein the plurality of markings comprise a linear grid.

43. (Withdrawn) The plunger of claim 41 wherein an area of the plunger between the markers is substantially opaque and the markings comprise substantially transparent portions.

44. (Withdrawn) The plunger of claim 35 further comprising a marker indicative of the position of the plunger, the marker mounted so as to move with the plunger.

45. (Withdrawn) The plunger of claim 41 further comprising a detection system having a light source and a plurality of detectors, the detection system positioned adjacent a portion of the plunger on which the markings are located such that the light source is on one side of the portion of the plunger and the plurality of detectors is on the opposite side of the portion of the plunger and wherein the markings on the portion of the plunger at a near end of infusion (NEOI) point of the syringe have a first size and the markings elsewhere on the portion of the plunger have a second size different than the first size such that the markings at the NEOI point allow illumination of a first number of the detectors and the markings elsewhere allow illumination of a second number of detectors different than the first number of detectors.

46. (Currently amended) A syringe for use in a fluid delivery apparatus having a threaded shaft, said syringe comprising:

a syringe body;

a plunger stem having a distal end and a proximal end;

a stopper positioned at the distal end of the stem, the stopper sized to fit within the syringe body; and

a flange positioned at the proximal end of the stem and outside of the syringe body, the flange extending radially outwardly from the stem and having a threaded portion sized

to engage the threaded shaft, wherein the flange has radially outwardly facing edges, the threaded portion being adjacent the edges, the edges formed to guide the threaded portion onto the threaded shaft;

wherein the plunger stem comprises an open area in the area extending from the threaded portion to the stopper to receive the threaded shaft.

47. (Original) The syringe of claim 46 wherein the threaded portion is molded into the flange.

Claims 48-49 (Canceled).

50. (Currently amended) The syringe of claim 46 wherein a guide slot is provided on the plunger substantially opposite the threaded portion, the guide slot configured to receive a guide rail to securely seat the threaded portion on the threaded shaft.

51. (Canceled).

52. (Currently amended) The syringe of claim 46 wherein the plunger stem comprises a plurality of markers adapted to indicate the movement and position of the plunger within the syringe body.

53. (Previously presented) The syringe of claim 52 wherein the plurality of markers comprise a linear grid.

54. (Previously presented) The syringe of claim 52 wherein an area of the plunger between the markers is substantially opaque and the markers comprise substantially transparent portions.

55. (Original) The syringe of claim 46 wherein the plunger includes a marker indicative of the position of the plunger, the marker mounted so as to move with the plunger.

56. (Currently amended) The syringe of claim 46 wherein the syringe body includes a syringe identification marker indicative of a characteristic of the syringe; and

the system further comprising a syringe detection system including a detector for detecting the identification marking of the syringe, the syringe detector system adapted to provide a signal in accordance with the identification marking detected.

Claims 57-66 (Canceled).

67. (Currently amended) The syringe of claim 46 ~~claim 49~~ wherein the flange includes a cut-out within which the threaded portion is disposed and the edges of the flange flare away from the cut-out to give the cut-out a non-clamping rounded V-shape wherein the V-shape guides the flange over the threaded shaft to engage the threaded portion with the threaded shaft but does not exert a clamping force to the threaded shaft.

68. (Canceled).

69. (Currently amended) A syringe for use in a fluid delivery apparatus having a threaded shaft, said syringe comprising:

a syringe body;

a plunger stem having a distal end and a proximal end;

a stopper positioned at the distal end of the stem, the stopper sized to fit within the syringe body; and

a flange positioned at the proximal end of the stem and outside of the syringe body, the flange extending radially outwardly from the stem, the flange having a thread facing outwardly, the thread sized to engage the threaded shaft, wherein the flange includes a cut-out within which the thread is disposed, the flange having edges that flare away from the cut-out to give the cut-out a non-clamping rounded V-shape wherein the V-shape guides the flange over the threaded shaft to engage the thread with the threaded shaft but does not exert a clamping force to the threaded shaft;

wherein a guide slot is provided on the plunger substantially opposite the thread, the guide slot configured to receive a guide rail to securely seat the thread on the threaded shaft.

70. (Previously presented) The syringe of claim 69 wherein the thread is molded into the flange.

Claims 71-73 (Canceled).

74. (Previously presented) The syringe of claim 69 wherein the plunger stem comprises an open area in the area extending from the thread to the stopper to receive the threaded shaft.

75. (Previously presented) The syringe of claim 69 wherein the plunger comprises a plurality of markers adapted to indicate the movement and position of the plunger within the syringe body.

76. (Previously presented) The syringe of claim 75 wherein the plurality of markers comprise a linear grid.

77. (Previously presented) The syringe of claim 75 wherein an area of the plunger between the markers is substantially opaque and the markers comprise substantially transparent portions.

78. (Previously presented) The syringe of claim 69 wherein the plunger includes a marker indicative of the position of the plunger, the marker mounted so as to move with the plunger.

79. (Previously presented) The syringe of claim 69 wherein the syringe includes a syringe identification marker indicative of a characteristic of the syringe.

80. (Currently amended) A syringe for use in a fluid delivery apparatus having a threaded shaft, said syringe comprising:

a syringe body;

a plunger stem having a distal end and a proximal end;

a stopper positioned at the distal end of the stem, the stopper sized to fit within the syringe body; and

a flange positioned at the proximal end of the stem and outside of the syringe body, the flange comprising radially outwardly facing edges and a threaded portion adjacent the edges, the threaded portion sized to engage the threaded shaft, wherein the flange includes a cut-out within which the threaded portion is disposed and edges of the flange flare away from the cut-out to give the cut-out a non-clamping rounded V-shape wherein the V-shape guides the flange over the threaded shaft to engage the threaded portion with the threaded shaft but does not exert a clamping force to the threaded shaft;

wherein the plunger stem comprises an open area in the area extending from the threaded portion to the stopper to receive the threaded shaft.

81. (Previously presented) The syringe of claim 80 wherein the threaded portion is molded into the flange.

Claims 82-83 (Canceled).

84. (Previously presented) The syringe of claim 80 wherein a guide slot is provided on the plunger substantially opposite the threaded portion, the guide slot configured to receive a guide rail to securely seat the threaded portion of the flange on the threaded shaft.

85. (Canceled).

86. (Previously presented) The syringe of claim 80 wherein the plunger comprises a plurality of markers adapted to indicate the movement and position of the plunger within the syringe body.

87. (Previously presented) The syringe of claim 86 wherein the plurality of markers comprise a linear grid.

88. (Previously presented) The syringe of claim 86 wherein an area of the plunger between the markers is substantially opaque and the markers comprise substantially transparent portions.

89. (Previously presented) The syringe of claim 80 wherein the plunger includes a marker indicative of the position of the plunger, the marker mounted so as to move with the plunger.

90. (Previously presented) The syringe of claim 80 wherein the syringe includes a syringe identification marker indicative of a characteristic of the syringe.